Appendices

Contents

Appendix A

Appendix A. Search Strategy

Ovid MEDLINE Search Strategy

1 Epidemiologic studies/ (5166)
2 exp case control studies/ (525207)
3 exp cohort studies/ (1131452)
4 Case control.tw. (57348)
5 (cohort adj (study or studies)).tw. (55643)
6 Cohort analy$.tw. (2558)
7 (Follow up adj (study or studies)).tw. (32450)
8 (observational adj (study or studies)).tw. (27770)
9 Longitudinal.tw. (105249)
10 randomized controlled trial/ (316611)
11 clinical trial/ (468024)
12 clinical trial, phase i.pt. (11624)
13 clinical trial, phase ii.pt. (18360)
14 clinical trial, phase iii.pt. (6539)
15 clinical trial, phase iv.pt. (640)
16 controlled clinical trial.pt. (83472)
17 randomized controlled trial.pt. (316611)
18 multicenter study.pt. (136354)
19 clinical trial.pt. (468024)
20 or/1-19 (1821334)
21 Craniocerebral Trauma/ (17808)
22 exp Brain Injuries/ (42331)
23 Cerebrovascular Trauma/ (65)
24 brain injur*.ti,ab. (27162)
25 head injur*.ti,ab. (16984)
26 tbi.ti,ab. (9150)
27 or/21-26 (74809)
28 20 and 27 (13181)
29 Rehabilitation/ (15502)
30 rehab*.ti,ab. (86406)
31 neurorehabilitation.ti,ab. (736)
32 29 or 30 or 31 (92978)
33 28 and 32 (1350)
34 limit 33 to "all child (0 to 18 years)" (658)
35 limit 34 to "all adult (19 plus years)" (554)
36 33 not 34 (692)
37 35 or 36 (1246)
38 limit 37 to (addresses or autobiography or bibliography or biography or case reports or clinical conference or congresses or dictionary or directory or in vitro or interactive tutorial or interview or lectures or legal cases or legislation or news or newspaper article or patient education handout or periodical index or portraits or video-audio media or webcasts) (65)
39 37 not 38 (1181)
40 limit 39 to yr="1980 -Current" (1168)

PsycINFO Search Strategy

1 epidemiologic studies.mp. (8127)
2 case control.mp. (4559)
3 exp Longitudinal Studies/ (14968)
4 (cohort adj (study or studies)).tw. (6277)
5 Cohort analy$.tw. (393)
6 (Follow up adj (study or studies)).tw. (8970)
7 (observational adj (study or studies)).tw. (3673)

8 longitudinal.mp. (60892)
9 randomized controlled trial.mp. (5151)
10 clinical trial.mp. or exp Clinical Trials/ (10383)
11 controlled clinical trial.mp. (745)
12 phase i clinical trial.mp. (17)
13 phase ii clinical trial.mp. (31)
14 phase iii clinical trial.mp. (32)
15 phase iv clinical trial.mp. (3)
16 multicenter study.mp. (710)
17 or/1-16 (103008)
18 exp Traumatic Brain Injury/ or exp Head Injuries/ or craniocerebral trauma.mp. (11296)
19 brain injur*.mp. (14000)
20 exp Cerebrovascular Accidents/ or cerebrovascular trauma.mp. (9891)
21 head injur*.mp. (5711)
22 tbi.mp. (4229)
23 or/18-22 (27560)
24 17 and 23 (1792)
25 exp Rehabilitation/ or exp Neuropsychological Rehabilitation/ or rehabilitation.mp. (67368)
26 rehab*.mp. (62993)
27 exp Neurorehabilitation/ or neurorehabilitation.mp. (588)
28 or/25-27 (69282)
29 24 and 28 (422)
30 limit 29 to (100 childhood <birth to age 12 yrs> or 120 neonatal <birth to age 1 mo> or 140 infancy <age 2 to 23 mo> or 160 preschool age <age 2 to 5 yrs> or 180 school age <age 6 to 12 yrs> or 200 adolescence <age 13 to 17 yrs>) (77)
31 limit 30 to ("300 adulthood <age 18 yrs and older>" or 320 young adulthood <age 18 to 29 yrs> or 340 thirties <age 30 to 39 yrs> or 360 middle age <age 40 to 64 yrs> or "380 aged <age 65 yrs and older>" or "390 very old <age 85 yrs and older>") (66)
32 29 not 30 (345)
33 31 or 32 (411)
34 limit 33 to yr="1980 -Current" (409)

Cochrane Central Register of Controlled Trials Search Strategy

1 traumatic brain injur* and rehab* (224)

PEDro Search Strategy

1 traumatic brain injur* AND rehab* (34)

Appendix B

Appendix B. Table 1. Risk of Bias for Individual Studies

Study	Study design	Overall Risk of Bias Assessment	Comments
Cicerone, 2008[1]	RCT	Moderate	Possible contamination via same professionals delivering treatment and control interventions; minimally clinically important difference in CIQ not specified *a priori*; subjective self-report scale used for primary outcome measurement; no adjustment for multiple comparisons.
Vanderploeg, 2008[2]	RCT	Low	Well-designed study; no adjustment for multiple comparisons.
Salazar, 2000[3]	RCT	Moderate	Outcome assessors not blinded; intervention implementation judged partially adequate; primary outcomes self-report; no adjustment for multiple comparisons.
Greenwood, 1994[4]	RCT	Moderate	Group randomization; moderate attrition at 6-month time point, high attrition at 12-month time point; no adjustment for multiple comparisons. Outcomes at 24 months considered high risk of bias due to high attrition and not used.
Ponsford, 2006[5]	Cohort	High	Potential selection bias, retrospective control group; intervention definition and implementation partially adequate; no adjustment for multiple comparisons, many outcomes assessed including several scales and subscales; potential reporting bias.
Sarajuuri, 2005[6]	Cohort	Moderate	Potential selection bias; confounding not appropriately addressed.
Prigatano, 1994[7]	Cohort	High	Potential selection bias, retrospective control group; outcome assessors not blinded; intervention implementation partially adequate; inconsistent outcomes measurement across groups; confounding not adequately addressed.
Rattok, 1992[8]	Cohort	Moderate	Possible contamination via same professionals delivering treatment and control interventions; blinding of outcomes assessors not reported; no adjustment for multiple comparisons.
Prigatano, 1984[9]	Cohort	Moderate	Potential selection bias, retrospective control group; inadequate intervention implementation; inconsistent outcomes measurement across groups; confounding not adequately addressed.
Hashimoto, 2006[10]	Cohort	High	Potential selection bias; blinding of outcomes assessors not reported, inadequate intervention definition; treatment group provided varying levels of treatment intensity, but comparisons are for entire group to a no treatment group; subjective self-report scale used for primary outcome measurement; minimally clinically important difference in CIQ not specified *a priori*; confounding not adequately addressed; no adjustment for multiple comparisons, many outcomes assessed including several scales and subscales.
Cicerone, 2004[11]	Cohort	Moderate	Selection bias; intervention definition and implementation partially adequate; subjective self-report scale used for primary outcome measurement; confounding not adequately addressed; no adjustment for multiple comparisons.
Willer, 1999[12]	Cohort	High	Potential selection bias; inadequate intervention definition; intervention implementation partially adequate; subjective self-report scale used for primary outcome measurement; minimally clinically important difference in CIQ not

Study	Study design	Overall Risk of Bias Assessment	Comments
			specified *a priori*; insufficient statistical analysis; confounding not adequately addressed; no adjustment for multiple comparisons.
Bell, 2005[13]	RCT	NA	Studies with only secondary outcomes not assessed for risk of bias.
Powell, 2002[14]	RCT	NA	Studies with only secondary outcomes not assessed for risk of bias.
Thomas, 2004[15]	Cohort	NA	Studies with only secondary outcomes not assessed for risk of bias.
Semlyen, 1998[16]	Cohort	NA	Studies with only secondary outcomes not assessed for risk of bias.

Appendix B. Table 2. Risk of Bias Assessment Form for RCTs
Author _____ ***Year*** _____ **PMID** _____ **Reviewer** _____

Question	Response	Criteria	Justification
	Internal Validity		
1. Was the method of randomization adequate?	Yes ☐	Method used should produce comparable groups.	
	No ☐	Pseudo randomization (ie. alternate allocation, by days of week, etc) or randomization approach cannot be determined	
	Uncertain ☐	Randomization method unclear	
2. Was allocation concealment adequate?	Yes ☐	Method used to conceal the allocation sequence could not have been foreseen in advance of, or during, enrolment.	
	No ☐	No concealment	
	Uncertain ☐	Could not be ascertained.	
3. Were outcome assessors blinded?	Yes ☐	Yes	
	No ☐	No	
	Uncertain ☐	Could not be ascertained.	
4a. Is the level of detail in describing the treatment intervention adequate?	Yes ☐	Treatment intervention described based upon model or theory, specific intervention components adequately described, interventions documented in manuals or other documentation.	
	Partially ☐	Some of the above features.	
	No ☐	None of the above features.	
4b. Is the level of detail in describing the control intervention adequate?	Yes ☐	Active control intervention described based upon model or theory, specific intervention components adequately described, interventions documented in manuals or other documentation. Passive control adequately described.	
	Partially ☐	Some of the above features.	
	No ☐	None of the above features.	
5. Are interventions assessed using valid and reliable measures, implemented consistently across all study participants?	Yes ☐	Implementation accompanied by staff training and fidelity checks, consistency across groups in treatment features not studied.	
	Partially ☐	Implementation accompanied by some of above features.	
	No ☐	No training or fidelity checks.	
6. Are outcomes assessed using valid and reliable measures, implemented	Yes ☐	Measure valid and reliable (i.e. objective measures, well validated scale, provider report)	
	Partially ☐	Some of the above features	

consistently across all study participants?		(partially validated scale)	
	No ☐	None of the above features. (self-report, scales with lower validity, reliability)	
7. Were incomplete outcome data adequately addressed?	Yes ☐	Balanced across groups and/or imputed using appropriate methods.	
	No ☐	High attrition or differential loss; no imputations or inappropriate imputations for missing data.	
	Uncertain ☐	Could not be ascertained.	
8. Are reports of the study free of suggestion of selective outcome reporting?	Yes ☐	All prespecified outcomes reported.	
	No ☐	Not all prespecified outcomes reported, subscales reported not prespecified, outcomes reported incompletely.	
	Uncertain ☐	Could not be ascertained.	
9. Is the study free from additional sources of bias?	Yes ☐		
	No ☐		
	Uncertain ☐		
	Overall Assessment		
Overall Risk of Bias assessment	Low ☐	Results are believable taking study limitations into consideration	
	Moderate ☐	Results are probably believable taking study limitations into consideration	
	High ☐	Results are uncertain taking study limitations into consideration	

Appendix B. Table 3. Risk of Bias Assessment Form for Observational Studies
Author _____ ***Year*** _____ **PMID** _____ **Reviewer** _____

Question	Response	Criteria	Justification
	Internal Validity		
1. Is the study design prospective, retrospective, or mixed?	Prospective ☐	Outcome has not occurred at the time the study is initiated and information is collected over time to assess relationships with the outcome.	
	Mixed ☐	Case-control or cohort studies in which one group is studied prospectively and the other retrospectively.	
	Retrospective ☐	Analyzes data from past records.	
2a. Are inclusion/exclusion criteria clearly stated (i.e., severity, time since injury, pre-existing conditions, comorbidities, prior tbi)	Yes ☐		
	Partially ☐	Some, but not all, criteria stated or some not clearly stated.	
	No ☐		
2b. TBI severity inclusion criteria measured using valid and reliable measures and appropriate cut points for mod/sev TBI?	Yes ☐	e.g., GCS<13; LOC> 30 minutes; AOC >24 hours; PTA>1 day; AISS>2; positive imaging	
	No ☐		
	Uncertain ☐	Could not be ascertained.	
2c. Did the study apply inclusion/exclusion criteria uniformly to all comparison groups of the study?	Yes ☐		
	Partially ☐	Some criteria applied to all arms	
	No ☐		
2d. Is the selection of the comparison group appropriate, after taking into consideration feasibility and ethical considerations?	Yes ☐	Groups selected from same source (e.g., community or hospital) to reduce baseline differences between groups. For case-control studies, cases should have met case definition if they had the outcome.	
	No ☐		
	Uncertain ☐	Could not be ascertained.	
3. Were outcome assessors blinded?	Yes ☐	Yes	
	No ☐	No	
	Uncertain ☐	Could not be ascertained.	
4a. Is the level of detail in describing the treatment intervention adequate?	Yes ☐	Treatment intervention described based upon model or theory, specific intervention components adequately described, interventions documented in manuals or other documentation.	
	Partially ☐	Some of the above features.	

	No ☐	None of the above features.	

4b. Is the level of detail in describing the control intervention adequate?	Yes ☐	Intervention described based upon model or theory, specific intervention components adequately described, interventions documented in manuals or other documentation.	
	Partially ☐	Some of the above features.	
	No ☐	None of the above features.	
5. Are interventions assessed using valid and reliable measures, implemented consistently across all study participants?	Yes ☐	Implementation accompanied by staff training and supervision, checks of adherence/fidelity; consistency across groups in treatment features not studied.	
	Partially ☐	Implementation accompanied by some of above features.	
	No ☐	Implementation accompanied by none of above features.	
6. Are outcomes assessed using valid and reliable measures, implemented consistently across all study participants?	Yes ☐	Measure valid and reliable (i.e. objective measures, well validated scale, provider report); consistent implementation across groups.	
	Partially ☐	Some of the above features (partially validated scale)	
	No ☐	None of the above features. (self-report, scales with lower validity, reliability); in consistent implementation across groups	
	Uncertain ☐	Could not be ascertained.	
7a. Was attrition from all groups less than 20 percent?	Yes ☐		
	No ☐		
	Uncertain ☐	Could not be ascertained (i.e. retrospective designs where eligible at baseline could not be determined)	
7b. Did attrition differ between groups by less than 20 percent?	Yes ☐		
	No ☐		
	Uncertain ☐	Could not be ascertained (i.e. retrospective designs where eligible at baseline could not be determined)	
7c. In cases of high attrition or differential attrition, is the impact assessed (e.g. through sensitivity analysis or other adjustment method)?	Yes ☐		
	No ☐		
	Uncertain ☐	Could not be ascertained (i.e. retrospective designs where eligible at baseline could not be determined)	

	NA ☐	Not considered high or case-control study	
8. Were the important confounding and effect modifying variables taken into account in the design and/or analysis (e.g. through matching, stratification, interaction terms, multivariate analysis, or other statistical adjustment)?	Yes ☐		
	Partially ☐	Some variables taken into account or adjustment achieved to some extent	
	No ☐	Not accounted for or not identified.	
	Uncertain ☐	Could not be ascertained	

9. Are the statistical methods used to assess the primary outcomes appropriate to the data?	Yes ☐	Statistical techniques used must be appropriate to the data and take into account issues such as controlling for dose-response, small sample size, clustering, rare outcomes, and multiple comparisons. In normally distributed data the standard error, standard deviation, or confidence intervals should be reported. In non-normally distributed data, inter-quartile range should be reported.	
	Partially ☐		
	No ☐		
	Uncertain ☐	Could not be ascertained	
10. Are reports of the study free of suggestion of selective outcome reporting?	Yes ☐		
	No ☐	Not all prespecified outcomes reported, subscales not prespecified reported, outcomes reported incompletely.	
	Uncertain ☐	Could not be ascertained.	
11. Is the study free from additional sources of bias?	Yes ☐		
	No ☐		
	Uncertain ☐		
	Overall Assessment		
Overall Risk of Bias assessment	Low ☐	Results are believable taking study limitations into consideration	
	Moderate ☐	Results are probably believable taking study limitations into consideration	
	High ☐	Results are uncertain taking study limitations into consideration	

Appendix C

Appendix C. Studies undergoing full text review

1. Altman IM, Swick S, Parrot D, et al. Effectiveness of community-based rehabilitation after traumatic brain injury for 489 program completers compared with those precipitously discharged. Archives of Physical Medicine & Rehabilitation. 2010 Nov;91(11):1697-704. 21044714. *Not eligible study design*
2. Anderson SI, Wilson CL, McDowell IP, et al. Late rehabilitation for closed head injury: a follow-up study of patients 1 year from time of discharge. Brain Injury. 1996 Feb;10(2):115-24. 8696311. *No comparison group*
3. Ashley MJ, Persel CS, Clark MC, et al. Long-term follow-up of post-acute traumatic brain injury rehabilitation: a statistical analysis to test for stability and predictability of outcome. Brain Injury. 1997 Sep;11(9):677-90. 9376835. *Not intervention study*
4. Ashley MJ, Persel CS, Lehr RP, Jr., et al. Post-acute rehabilitation outcome: relationship to case-management techniques and strategy. Journal of Insurance Medicine (Seattle). 1994;26(3):348-54. 10150511. *Not eligible study design*
5. Backhaus SL, Ibarra SL, Klyce D, et al. Brain injury coping skills group: a preventative intervention for patients with brain injury and their caregivers.[Erratum appears in Arch Phys Med Rehabil. 2010 Nov;91(11):1793]. Archives of Physical Medicine & Rehabilitation. 2010 Jun;91(6):840-8. 20510972. *No primary or secondary outcomes*
6. Bateman A, Culpan FJ, Pickering AD, et al. The effect of aerobic training on rehabilitation outcomes after recent severe brain injury: a randomized controlled evaluation. Archives of Physical Medicine & Rehabilitation. 2001 Feb;82(2):174-82. 11239307. *No primary or secondary outcomes*
7. Bell KR, Temkin NR, Esselman PC, et al. The effect of a scheduled telephone intervention on outcome after moderate to severe traumatic brain injury: a randomized trial. Archives of Physical Medicine & Rehabilitation. 2005 May;86(5):851-6. 15895327. *Eligible*
8. Benge JF, Caroselli JS, Reed K, et al. Changes in supervision needs following participation in a residential post-acute brain injury rehabilitation programme. Brain Injury. 2010;24(6):844-50. 20377342. *Not eligible comparison group*
9. Bornhofen C, McDonald S. Comparing strategies for treating emotion perception deficits in traumatic brain injury. Journal of Head Trauma Rehabilitation. 2008 Mar-Apr;23(2):103-15. 18362764. *Impairment-specific intervention*
10. Bornhofen C, McDonald S. Treating deficits in emotion perception following traumatic brain injury. Neuropsychological Rehabilitation. 2008 Jan;18(1):22-44. 17852760. *Impairment-specific intervention*
11. Bourgeois MS, Lenius K, Turkstra L, et al. The effects of cognitive teletherapy on reported everyday memory behaviours of persons with chronic traumatic brain injury. Brain Injury. 2007 Nov;21(12):1245-57. 18236200. *Not 75% moderate/severe TBI*
12. Bowen A, Tennant A, Neumann V, et al. Neuropsychological rehabilitation for traumatic brain injury: do carers benefit? Brain Injury. 2001 Jan;15(1):29-38. 11201312. *No primary or secondary outcomes*
13. Braunling-McMorrow D, Dollinger SJ, Gould M, et al. Outcomes of post-acute rehabilitation for persons with brain injury. Brain Injury. 2010;24(7-8):928-38. 20545448. *No comparison group*
14. Braverman SE, Spector J, Warden DL, et al. A multidisciplinary TBI inpatient rehabilitation programme for active duty service members as part of a randomized clinical trial. Brain Injury. 1999 Jun;13(6):405-15. 10401542. *Eligible - companion to 10865301*
15. Brooks N. The effectiveness of post-acute rehabilitation. Brain Injury. 1991 Apr-Jun;5(2):103-9. 1873599. *No original data*
16. Burke WH, Wesolowski MD, Guth ML. Comprehensive head injury rehabilitation: an outcome evaluation. Brain Injury. 1988 Oct-Dec;2(4):313-22. 3203177. *No comparison group*
17. Bush BA, Novack TA, Malec JF, et al. Validation of a model for evaluating outcome after traumatic brain injury. Archives of Physical Medicine & Rehabilitation. 2003 Dec;84(12):1803-7. 14669187. *No comparison group*
18. Cannon XL, Zhu WS, Poon Chetwyn CCCSW. Does Intensive Rehabilitation Improve Functional Outcome In Patients with Traumatic Brain Injury (TBI). Preliminary Results of a Prospective Randomized Controlled Trial. Journal of Neurotrauma. 1998(1):85. CN-00689851. *No primary or secondary outcomes*
19. Carnevale GJ, Anselmi V, Busichio K, et al. Changes in ratings of caregiver burden following a community-based behavior management program for persons with traumatic brain injury. The Journal of head trauma rehabilitation. 2002(2):83-95. CN-00378995. *Not 75% moderate/severe TBI*

20. Carnevale GJ, Anselmi V, Johnston MV, et al. A natural setting behavior management program for persons with acquired brain injury: a randomized controlled trial. Archives of physical medicine and rehabilitation. 2006(10):1289-97. CN-00568342. *No primary or secondary outcomes*
21. Cattelani R, Roberti R, Lombardi F. Adverse effects of apathy and neurobehavioral deficits on the community integration of traumatic brain injury subjects. European journal of physical & rehabilitation medicine. 2008 Sep;44(3):245-51. 18762734. *Not intervention study*
22. Cattelani R, Tanzi F, Lombardi F, et al. Competitive re-employment after severe traumatic brain injury: clinical, cognitive and behavioural predictive variables. Brain Injury. 2002 Jan;16(1):51-64. 11796099. *Not intervention study*
23. Cattelani R, Zettin M, Zoccolotti P. Rehabilitation treatments for adults with behavioral and psychosocial disorders following acquired brain injury: a systematic review. Neuropsychology Review. 2010 Mar;20(1):52-85. 20143264. *No original data*
24. Chang Zj LP. Rehabilitation and acupuncture treatment for patients with traumatic brain injury. Chinese Journal of Medical Device. 2005(5):38-9. CN-00784100. *No primary or secondary outcomes*
25. Chard SE. Community neurorehabilitation: a synthesis of current evidence and future research directions. NeuroRx. 2006 Oct;3(4):525-34. 17012066. *No original data*
26. Chen SH, Thomas JD, Glueckauf RL, et al. The effectiveness of computer-assisted cognitive rehabilitation for persons with traumatic brain injury. Brain Injury. 1997 Mar;11(3):197-209. 9058001. *No primary or secondary outcomes*
27. Chesnut RM, Carney N, Maynard H, et al. Summary report: evidence for the effectiveness of rehabilitation for persons with traumatic brain injury. The Journal of Head Trauma Rehabilitation 1999;14(2):176-188. 1999. *No original data*
28. Choi JH, Jakob M, Stapf C, et al. Multimodal early rehabilitation and predictors of outcome in survivors of severe traumatic brain injury. Journal of Trauma-Injury Infection & Critical Care. 2008 Nov;65(5):1028-35. 19001970. *No comparison group*
29. Cicerone KD, Azulay J, Trott C. Methodological quality of research on cognitive rehabilitation after traumatic brain injury. Archives of Physical Medicine & Rehabilitation. 2009 Nov;90(11 Suppl):S52-9. 19892075. *No original data*
30. Cicerone KD, Dahlberg C, Kalmar K, et al. Evidence-based cognitive rehabilitation: recommendations for clinical practice. Archives of Physical Medicine & Rehabilitation. 2000 Dec;81(12):1596-615. 11128897. *No original data*
31. Cicerone KD, Dahlberg C, Malec JF, et al. Evidence-based cognitive rehabilitation: updated review of the literature from 1998 through 2002. Archives of Physical Medicine & Rehabilitation. 2005 Aug;86(8):1681-92. 16084827. *No original data*
32. Cicerone KD, Langenbahn DM, Braden C, et al. Evidence-based cognitive rehabilitation: updated review of the literature from 2003 through 2008. Archives of Physical Medicine & Rehabilitation. 2011 Apr;92(4):519-30. 21440699. *No original data*
33. Cicerone KD, Mott T, Azulay J, et al. Community integration and satisfaction with functioning after intensive cognitive rehabilitation for traumatic brain injury. Archives of Physical Medicine & Rehabilitation. 2004 Jun;85(6):943-50. 15179648. *Eligible*
34. Cicerone KD, Mott T, Azulay J, et al. A randomized controlled trial of holistic neuropsychologic rehabilitation after traumatic brain injury. Archives of Physical Medicine & Rehabilitation. 2008 Dec;89(12):2239-49. 19061735. *Eligible*
35. Cifu DX, Kreutzer JS, Kolakowsky-Hayner SA, et al. The relationship between therapy intensity and rehabilitative outcomes after traumatic brain injury: a multicenter analysis. Archives of Physical Medicine & Rehabilitation. 2003 Oct;84(10):1441-8. 14586910. *No primary or secondary outcomes*
36. Coetzer R, Rushe R. Post-acute rehabilitation following traumatic brain injury: are both early and later improved outcomes possible? International Journal of Rehabilitation Research. 2005 Dec;28(4):361-3. 16319563. *No comparison group*
37. Constantinidou F, Thomas RD, Robinson L. Benefits of categorization training in patients with traumatic brain injury during post-acute rehabilitation: additional evidence from a randomized controlled trial. Journal of Head Trauma Rehabilitation. 2008 Sep-Oct;23(5):312-28. 18815508. *Impairment-specific intervention*

38. Cope DN, Cole JR, Hall KM, et al. Brain injury: analysis of outcome in a post-acute rehabilitation system. Part 2: Subanalyses. Brain Injury. 1991 Apr-Jun;5(2):127-39. 1908341. *No comparison group*
39. Cope DN, Cole JR, Hall KM, et al. Brain injury: analysis of outcome in a post-acute rehabilitation system. Part 1: General analysis. Brain Injury. 1991 Apr-Jun;5(2):111-25. 1873600. *No comparison group*
40. Cusick CP, Gerhart KA, Mellick D, et al. Evaluation of the home and community-based services brain injury Medicaid Waiver Programme in Colorado. Brain Injury. 2003 Nov;17(11):931-45. 14514446. *Not eligible study design*
41. Dahlberg CA, Cusick CP, Hawley LA, et al. Treatment efficacy of social communication skills training after traumatic brain injury: a randomized treatment and deferred treatment controlled trial. Archives of Physical Medicine & Rehabilitation. 2007 Dec;88(12):1561-73. 18047870. *Impairment-specific intervention*
42. Dawson DR. A multidsciplinary community-based rehabilitation program improved social functioning in severe traumatic brain injury. ACP Journal Club. 2002(1):22. CN-00477567. *No original data*
43. Devitt R, Colantonio A, Dawson D, et al. Prediction of long-term occupational performance outcomes for adults after moderate to severe traumatic brain injury. Disability & Rehabilitation. 2006 May 15;28(9):547-59. 16690584. *Not intervention study*
44. Dirette DK, Hinojosa J, Carnevale GJ. Comparison of remedial and compensatory interventions for adults with acquired brain injuries. Journal of Head Trauma Rehabilitation. 1999 Dec;14(6):595-601. 10671705. *Not 75% moderate/severe TBI*
45. Do HK, Sahagian DA, Schuster LC, et al. Head trauma rehabilitation: program evaluation. Rehabilitation Nursing. 1988 Mar-Apr;13(2):71-5. 3353569. *No primary or secondary outcome*
46. Doig E, Fleming J, Tooth L. Patterns of community integration 2-5 years post-discharge from brain injury rehabilitation. Brain Injury. 2001 Sep;15(9):747-62. 11516344. *Not intervention study*
47. Drechsler R, Padovan F, Di Stefano G, et al. [An integrated concept for vocational rehabilitation of brain injured patients--a catamnestic study of occupational outcome 1 to 2 years later]. Rehabilitation. 1995 Nov;34(4):193-202. 8570901. *No comparison group*
48. Eames P, Cotterill G, Kneale TA, et al. Outcome of intensive rehabilitation after severe brain injury: a long-term follow-up study. Brain Injury. 1996 Sep;10(9):631-50. 8853867. *No comparison group*
49. Evans L, Brewis C, New Zealand Guidelines Group NZACC. The efficacy of community-based rehabilitation programmes for adults with TBI [with consumer summary]. International Journal of Therapy and Rehabilitation 2008 Oct;15(10):446-458. 2008. *No original data*
50. Felmingham KL, Baguley IJ, Crooks J. A comparison of acute and postdischarge predictors of employment 2 years after traumatic brain injury. Archives of Physical Medicine & Rehabilitation. 2001 Apr;82(4):435-9. 11295001. *No comparison group*
51. Fleming J, Kuipers P, Foster M, et al. Evaluation of an outpatient, peer group intervention for people with acquired brain injury based on the ICF 'environment' dimension. Disability and Rehabilitation: An International, Multidisciplinary Journal. 2009;31(20):pp. Peer Reviewed Journal: 2010-12838-005. *Not 75% moderate/severe TBI*
52. Fleming JM, Lucas SE, Lightbody S. Using occupation to facilitate self-awareness in people who have acquired brain injury: A pilot study. Canadian Journal of Occupational Therapy/ Revue Canadienne D'Ergotherapie. 2006;73(1):pp. Peer Reviewed Journal: 2008-00032-005. *Not intervention study*
53. Fleming JM, Strong J, Ashton R. Cluster analysis of self-awareness levels in adults with traumatic brain injury and relationshipto outcome. Journal of Head Trauma Rehabilitation. 1998 Oct;13(5):39-51. 9753534. *No comparison group*
54. Frankel JE, Marwitz JH, Cifu DX, et al. A follow-up study of older adults with traumatic brain injury: taking into account decreasing length of stay. Archives of Physical Medicine & Rehabilitation. 2006 Jan;87(1):57-62. 16401439. *Not eligible study design*
55. Geurtsen G, Martina J, Van Heugten C, et al. A prospective study to evaluate a new residential community reintegration programme for severe chronic brain injury: The Brain Integration Programme. Brain Injury. 2008;22(7-8):pp. Peer Reviewed Journal: 2008-09277-005. *No comparison group*

56. Geurtsen GJ, van Heugten CM, Martina JD, et al. A prospective study to evaluate a residential community reintegration program for patients with chronic acquired brain injury. Archives of Physical Medicine & Rehabilitation. 2011 May;92(5):696-704. 21530716. *Not 75% moderate/severe TBI*
57. Giles GM. Cognitive versus functional approaches to rehabilitation after traumatic brain injury: commentary on a randomized controlled trial. American Journal of Occupational Therapy. 2010(1):182-5. CN-00755890. *No original data*
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Appendix D

Appendix D. Table 1. Intermediate outcomes assessed in Included Studies

Intermediate Outcomes (more appropriate to rehabilitation settings or specific impairment domains)	Frequency
6-Item Interpersonal Support Evaluation List	1
Academic skills	1
Auditory Consonant Trigrams	1
Barthel Index (BI)	3
Bond Neurophysical Scale	1
Brief Symptom Inventory-18 (BSI-18)	1
BRISS-R, PDBS, and PCSS	1
Buschke Selective Reminding Test	1
California Verbal Learning Test II	3
Cambridge Prospective Memory Test (CAMPROMPT)	1
Center for Epidemiological Studies Depression Scale	1
Comprehensive Assessment of Prospective Memory (CAPM)	1
Control Oral Word Association	2
COWAT	1
Current Status-Relative Ratings (SPRS-Relative)	1
Depression Anxiety Stress Scales (DASS)	2
Facial Expression Matching Task	1
Facial Expression Naming Task	1
Functional Assessment Measure (FAM)	2
Functional Independence Measure (FIM)	5
Functional Status Examination	1
General Health Questionnaire	1
Glasgow Assessment Schedule	1
Glasgow Outcome Scale –Extended (GOS-E)	2
Goal Attainment Scaling (GAS)	1
Halstead-Reitan Neuropsychological Impairment Index	2
Higher order and conceptual skills	1

Intermediate Outcomes (more appropriate to rehabilitation settings or specific impairment domains)	Frequency
Katz Adjustment scale (KAS)	2
Katz Adjustment Scale-Relative's Form (KAS-R)	2
La Trobe Communication Questionnaire	1
Leeds Depression Scale	1
Logical memory	1
Mill Hill Vocabulary	1
Modified Health and Activity Limitations Survey (HALS)	1
Neurobehavioral Functioning Inventory (NFI)	1
Neurobehavioral Rating Scale	1
Orientation Remedial Module (ORM)	1
PASAT	1
Perceived self-efficacy	1
Profile of Functional Impairment in Communication (PFIC)	1
Psychomotor dexterity	1
Purdue Pegboard	1
Rey Complex Figure Test	4
Russell-Neurenger Average Impairment Rating (AIR)	1
Scales of Cognitive Ability for TBI	1
Social Activity Interview	1
Social Communication Skills Questionnaire Adapted (SCSQ-A)	1
Social Performance Survey Schedule	1
SPSS-Positive and SPSS Negative	1
Symbol Digits Modalities Test	1
The Awareness of Social Inference Test (TASIT), parts 1, 2, and 3	3
The Booklet Category Test	3
Therapeutic Alliance	1
Time in therapy	2

Intermediate Outcomes (more appropriate to rehabilitation settings or specific impairment domains)	Frequency
Trahan Continuous Visual Memory Test	1
Trail Making Tests	3
UCLA Loneliness Scale	1
Visual processing skills	1
WAIS-R	1
WAIS-verbal	1
Weekly social activity data	1
Weschler Abbreviated Scale of Intelligence	1
Weschler Memory Scale III	2
Weschler Memory Scale Revised	1
Wisconsin Card Sorting Test	2
Woodcock-Johnson III	1

Note: This table lists the outcomes assessed in eligible studies that we classified as intermediate outcomes. The 23 eligible studies assessed over 50 different intermediate outcomes scales.

Appendix D. Table 2. Secondary outcomes

Study, Design; Instrument	Treatment Arms	Outcome Before Treatment	Outcome After Completion of Treatment	Treatment vs. Control; Comments
Cicerone 2008,[1]				ES=0.26 [-0.22 to 0.74]
RCT **Perceived Quality of Life (PQOL)** post treatment (16 weeks)	Intensive Cognitive Rehabilitation Program (ICRP) (n=34)	59.0 (21.7)	66.8 (17.5) P<0.05 versus before treatment	No significant differences between groups but Intensive cognitive rehabilitation participants showed greater improvements on the PQOL
	Standard Neurorehabilitation Program (STD) (n=34)	61.2 (16.5)	62.2 (17.2)	
Vanderploeg 2008,[2]				ES=0.12 [-0.11 to 0.34]
RCT	Functional-experimental (n=150)	NR	8.2 (5.3)	No significant differences between groups (P=0.29)
Disability Rating Scale (DRS) 1 year post protocol treatment	Cognitive-didactic (n=152)	NR	7.6 (4.8)	
Vanderploeg 2008,[2]				RR = 1.06 [0.88 to 1.28]
RCT	Functional-experimental (n=124)	NR	65% (81/124)	No significant differences between groups (P=0.53)
Quality of Life (satisfied with life- yes/no) 1 year post protocol treatment	Cognitive-didactic (n=130)	NR	62% (80/130)	
Powell 2002,[14]				
RCT **Brain injury community rehabilitation outcome-39 (BICRO-39)** 27 weeks post treatment	Outreach (n=35 of 54 randomized)	Median (range) 15.3 (8 to 22.3)	% improving 80.0 (28/35) Median change (range) 2.5 (-1.7 to 6.2)	RR = 1.14 [0.88 to 1.49] Total BICRO-39 change score (summed across the six scales) was significantly greater in the outreach group than in the information group (mean ranks: outreach 43.2, information 33.4; *U*=517, p=0.05).
	Information (n=40 of 56 randomized)	Median (range) 12.9 (8.8 to 25.7)	% improving 70.0 (28/40) Median change (range) 0.9 (-4.1 to 6.8)	
Bell 2005[13] **RCT**	Telephone	NR	Adjusted mean 0.78	Treatment effect=0.10 (0.02-0.19)
EuroQoL	Standard	NR	Adjusted mean 0.67	
Bell 2005[13]	Telephone	NR	Adjusted mean	Treatment effect=0.40 (-0.05-0.84)

Study, Design; Instrument	Treatment Arms	Outcome Before Treatment	Outcome After Completion of Treatment	Treatment vs. Control; Comments
RCT			6.58	
	Standard	NR	Adjusted mean 6.19	
GOS-E				
Bell 2005[13] **RCT**	Telephone	NR	Adjusted mean 78.9	Treatment effect=8.8 (1.7-15.9)
	Standard	NR	Adjusted mean 70.1	
PQoL				
Cicerone 2004[11]	Intensive Cognitive Rehabilitation Program (ICRP) (n=34)	NR	27.1 (4.6)	Standard treatment group reported higher QCI scores (P<.01)
QCI				
	Standard Neurorehabilitation Program (STD) (n=34)	NR	29.7 (4.4)	
Thomas 2004[15]	Potential Unlimited Program	35.36 (8.80)	Stage 1 42.57 (11.08) Posttreatment 38.26 (10.56) 6-month followup 46.14 (12.22) 2-year followup 50.00 (13.95)	Only significant difference between groups at 6-month followup.
	No treatment	38.63 (21.97)	Stage 1 39.63 (19.66) Posttreatment 39.00 (18.88) 6-month followup 20.25 (14.73) 2-year followup 41.83 (10.36)	
Semlyen 1998[16] quasi-experimental (CCT)	Multidisciplinary rehabilitation service (n=33)	Group differences in change 8 wk to 12 wk 4.00 (p<0.001)†	Group differences in change 6 mo to 12 mo 3.82 (p<0.01)†	The multidisciplinary rehabilitation service group showed significant gains throughout the rehabilitation period, the single discipline approach group did not.
Newcastle Independence Assessment Form (NIAF) 6-12 months post	Single discipline approach (n=18)	Group differences in change 8 wk to 12 wk 2.30 (p<0.05)†	Group differences in change 6 mo to 12 mo 1.05 (p NS)	

Study, Design; Instrument	Treatment Arms	Outcome Before Treatment	Outcome After Completion of Treatment	Treatment vs. Control; Comments
treatment (rehab period)				
Greenwood 1994[4] GOS-E	Case-management (N=53 at entry)	NR	6 months posttreatment 5.3 (1.7) N=48 12 months posttreatment 5.5 (1.6) N=37 24 months posttreatment 5.6 (1.5) N=21	No group differences.
	Control (N=65 at entry)	NR	6 months posttreatment 5.8 (1.5) N=59 12 months posttreatment 6.2 (1.4) N=55 24 months posttreatment 6.3 (1.2) N=29	
Greenwood 1994[4] GOS-E	Case-management (N=53 at entry)	NR	24 months posttreatment 2.0 (2.4) N=19	Case managed have significantly worse DRS scores. (p<0.05)
	Control (N=65 at entry)	NR	24 months posttreatment 0.6 (1.7) N=29	

* Based on Cohen's "Rules-of-Thumb" standardized mean difference effect size are as follows: small = 0.20; medium = 0.50; and large = 0.80. ** 25th and 75th quartiles. † For within group differences between means at each time point

ES = effect size; NS = not statistically significant; RR = Risk ratio [95% confidence interval]

Note: This table presents the results of studies that assessed a secondary outcome.

Appendix E

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics
Bell, 2005[13] **Moderate to Severe TBI**	**Telephone Counseling** **Theory/Model:** Modeled after validated telephone interventions in chronic care, smoking cessation, depression **Program Type:** Post-rehabilitation telephone contact **Setting:** Patient home **Delivery:** Scheduled phone calls with individualized mail supplements	**Description:** Scheduled phone calls made "research care manager to randomly allocated post-rehabilitation discharge patients. Calls were comprised of 3 basic elements: Follow-up of previously stated concerns, patient or family member stated current concerns, research care manager determined level of intervention in response to patient's concern. **Coordination:** NR **Disciplines:** NR **Components:** Giving information, mentoring, goal-setting, reassurance, modeling problem-solving, referral to community resources, triaging to regional or tertiary center if local resources unavailable **Therapy hours/week:** 30-45 minutes, weeks 2, 4 and months 2, 3, 5, 7, and 9 post-rehabiltation **Duration:** 9 months **Total therapy hours:** NR **Manualized:** Yes, described in detail in previous publication **Staff Training:** NR **Fidelity Checks:** NR	**Bell, et al, 2005 [**15895327**]** **Moderate to Severe TBI**	**Telephone Counseling** **Theory/Model:** Modeled after validated telephone interventions in chronic care, smoking cessation, depression **Program Type:** Post-rehabilitation telephone contact **Setting:** Patient home **Delivery:** Scheduled phone calls with individualized mail supplements

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics
Cicerone, 2004[11] **Study design** Prospective Cohort **Sample size** 57 **Location** Edison, NJ **Setting** Community-based, postacute outpatient brain injury rehabilitation program **Interventions** • Intensive cognitive rehabilitation group (ICRP) (n=27) • (Control) Standard neurorehabilitation (SRP) (n=29) **Primary outcomes** CIQ	**Inclusion criteria** • medically stable • independent in basic self-care skills • cognitive ability to participate in treatment • medical documentation TBI • 18 or older • adequate language expression and comprehension **Exclusion criteria** • current substance use or psychiatric disturbance precluding effective treatment • no available family member or person to participate in program	**Age (years±SD)** • ICRP 38±10.6 • SRP 37±12.0 **Gender (% male)** • ICRP 63% • SRP 79% **Race/ethnicity** NR **Education (years±SD)** • ICRP 13.2±1.7 • SRP 13.0±2.2 **Employment status (% competitively employed)** • ICRP 96 • SRP 97 **Income** NR **Marital status** NR **Military/Veteran** NR **Insurance status** NR **Prior TBI** NR **Preexisting psychiatric conditions** NR	**Severity (% moderate/severe)** • ICRP 89% • SRP 90% **Severity definition** NR **Time since injury (months±SD)** • ICRP 33.9±4.8 • SRP 4.8±9.5 **TBI etiology** NR **Area of brain injured** NR **Other injury characteristics** NR	**Comorbidities** Psychiatric comorbidities not described, although subjects identified with current substance use or psychiatric disturbance that would preclude effective treatment for their cognitive deficits were not admitted. Psychiatric subjects were guided to the intensive cognitive group. **Compensation seeking** NR **Acute rehabilitation history** NR **Concomitant treatment** NR

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics
Cicerone, 2008[1] **Study design** RCT **Sample size** 68 **Location** Edison, NJ **Setting** Postacute brain injury rehabilitation center in suburban hospital **Interventions** • Intensive cognitive rehabilitation (ICRP) • Standard neurorehabilitation (STD) **Primayr Outcomes** • CIQ • Vocational Integration Scale (community-based employment) **Secondary Outcomes** • Perceived Quality of Life scale (PQOL)	**Inclusion Criteria:** • Medical documentation of TBI based on primary source within 24 hours of injury • At least 3 months postinjury • 18-62 years of age • Adequate language expression and comprehension (English) • Judged to require at least 4 months comprehensive treatment • Clinically appropriate for either arm of treatment • Capable of attending treatment 3 days/week • Capable of giving informed consent **Exclusion Criteria:** • Active psychiatric illness, substance abuse, or pain that may prevent compliance with treatment	**Age (years, SD)** ICRP: 39 (±11.) STD: 35 (±12.4) **Gender (% male):** 68% **Race/ethnicity:** 75% white, 10% black, 12% Hispanic, 3% Asian **Education:** (HS or <, some college, college grad) **Employment status:** 79% employed, 4% unemployed, 2% homemaker, 13% student, 2% retired **Income:** NR **Marital status(% married):** 35% **Military/Veteran status:** NR **Insurance status:** NR **Prior TBI:** 4% **Preexixting psychiatric conditions:** psychiatric illness 13% substance abuse 21%	**Severity** Mild: 13% ModerateI: 24% SevereI: 59% **Severity Definition:** Any combination of initial Glasgow Coma Scale score, duration of unconsciousness, duration of post-traumatic amnesia, and positive neuroimaging available from primary medical records. **Time since injury (mos mean, (std dev.))** ICRP=49.6 (±76.5) STD=37.0 (±58.2) **TBI Etiology** NR **Brain area injured** NR **Other injury characteristics:** NR	**Comorbidities:** NR **Compensation seeking status:** NR **Acute rehabilitation history (% inpatient rehab)** ICRP: 77% STD: 85% **Concomitant Treatment** NR

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics

Greenwood, 1994[4]
 	
Study design
prospective controlled unmatched nonrandomized study
 	
Sample size
126 (outcomes for 118)
 	
Location
four district general hospitals and two university teaching hospitals with neurosurgical units
 	
Setting
London and environs
 	
Interventions
• case managed (CM) (n=56)
• control (n=70)
 	
Secondary outcomes
• DRS
• GOS
	Inclusion criteria
	• closed head injury
	• aged 16-60
	• been in coma for 6 hours or had a PTA > 48 hours
	• care giver was resident in district
	• informed consent
	
	Exclusion criteria
	• received hospital treatment for drug or alcohol misuse
	• aged 16-60
	• psychiatric disturbance, or a disorder of the central nervous system during the previous year
	• no fixed abode or if follow up unlikely
		Age (years±SD)
		• CM 31.6±14.4
		• control 30.7±14.0
		
		Gender (% male)
		• CM 69.6
		• control 75.7
		
		Race/ethnicity
		NR
		
		Education
		NR
		
		Employment status (%)
		• CM 100
		• control 96
		
		Income
		NR
		
		Marital status
		NR
		
		Military/Veteran
		NR
		
		Insurance status
		NR
		
		Prior TBI
		NR
		
		Preexisting psychiatric conditions
		alcohol intake at injury (%)
		• CM 36
		• control 37
			Severity definition
			“severely head injured patients”
			
			Severity
			GCS (mean±SD)
			• CM 5.5±2.6
			• control 6.6±3.0
			
			Duration of PTA (days±SD)
			• CM 64.9±97.5
			• control 40.8±75.0
			
			Time since injury
			NR
			
			TBI etiology (%)
			traffic accident/assault/fall/other
			• CM
			  ○ traffic accident 60
			  ○ assault 16
			  ○ fall 18
			  ○ other 5
			• control
			  ○ traffic accident 63
			  ○ assault 14
			  ○ fall 16
			  ○ other 7
			
			Area of brain injured
			NR
			
			MRI/imaging findings
			NR
			
			Other injury characteristics
			days unconscious (mean±SD)
			• CM 11.3±13.5
			• control 4.6±7.5
				Comorbidities
				• respiratory
				  ○ CM 47
				  ○ control 21
				• conservative management
				  ○ CM 16
				  ○ control 31
				• tracheostomy
				  ○ CM 32
				  ○ control 16
				
				Compensation seeking (%)
				• 6 months
				  ○ CM 2
				  ○ control 2
				• 12 months
				  ○ CM 0
				  ○ control 6
				• 24 months
				  ○ CM 17
				  ○ control 4
				
				Acute rehabilitation history
				NR
				
				Concomitant treatment
				NR

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics

Hashimoto 2006[10]
 	
Study design
prospective, nonrandomized controlled trial
 	
Sample size
37
 	
Location
Kanagawa Prefecture, Japan
 	
Setting
Kanagawa Rehabilitation Hospital
 	
Interventions
• comprehensive day treatment program (n=25)
• control (outpatients with TBI) (n=12)
 	
Primary outcomes
• return to work
• FIM/FAM
• CIQ
	Inclusion criteria
	• near independence in Activities of Daily Living (ADL) irrespective of ability to walk or wheelchair use
	• the goal of returning to work or school
	• having no place they were required to visit frequently except for outpatient clinic
	
	Exclusion criteria
	NR
		Age (years±SD)
		• intervention 26.6±9.7
		• control 28.7±10.9
		
		Gender (% male)
		• intervention 72
		• control NR
		
		Race/ethnicity
		NR
		
		Education
		NR
		
		Employment status (% competitively employed)
		• intervention 60
		• control NR
		
		Income
		NR
		
		Marital status
		NR
		
		Military/Veteran
		NR
		
		Insurance status
		NR
		
		Prior TBI
		NR
		
		Pre-existing psychiatric conditions
		NR
			Severity definition
			GCS ≤ 8
			
			Severity (%)
			• intervention 76.0
			• control 83.3
			
			Duration of PTA
			NR
			
			Time since injury (days±SD)
			• intervention 527.3±512.6
			• control 487.6±125.9
			
			TBI etiology (%)
			• intervention
			  ○ auto accident 20
			  ○ pedestrian/auto 20
			  ○ bike/auto 36
			  ○ cerebral aneurysm 8
			  ○ glioma 4
			  ○ fall 8
			  ○ work accident 4
			• control NR
			
			Area of brain injured
			• intervention
			  ○ diffuse brain injury 64
			  ○ diffuse brain injury + right acute subdural hematoma 20
			  ○ right acute subdural hematoma 4
			  ○ Sub arachnoid hemorrhage 8
			  ○ diffuse brain injury + contusion 4
			• control NR
			
			MRI/imaging findings
			NR
				Comorbidities
				NR
				
				Compensation seeking
				NR
				
				Acute rehabilitation history
				NR
				
				Concomitant treatment
				NR

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics
Ponsford, 2006[5] **Study design** Controlled, individually matched cohort trial **Sample size** 77 **Location** Melbourne, Australia **Setting** Rehabilitation center **Interventions** • Community based rehabilitation (n=77) • Control (n=77) **Primary outcomes** Return to work	**Inclusion criteria** Moderate to severe TBI patients **Exclusion criteria** NR	**Age (years±SD)** • Community based 35.43±16.65 • Control 33.78±15.41 **Gender (% male)** • Community based 73 • Control 73 **Race/ethnicity** NR **Education (years±SD)** • Community based 11.56±2.42 • Control 11.15±2.54 **Employment status (% competitively employed)** • Community based 66 • Control 70 **Income** NR **Marital status (% single)** • Community based 63 • Control 61 **Military/Veteran** NR **Insurance status** NR **Prior TBI** NR **Preexisting psychiatric conditions** NR	**Severity (mean GCS±SD)** • Community based 8.22±4.37 • Control 7.76±4.13 **Severity definition** GCS **Time since injury (years)** NR **TBI Etiology** NR **Area of brain injured** NR **Other injury characteristics** NR	**Comorbidities** NR **Compensation seeking** NR **Acute rehabilitation history** NR **Concomitant treatment** NR

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics
Powell, 2002[14] **Study design:** RCT **Sample size** 94 **Location** London, England **Setting** Community-based **Study design:** RCT **Interventions:** • Outreach • Information **Primary Outcomes** • none **Secondary Outcomes** • BICRO-39 • **Intermediate Outcomes** • BICRO-39 • FIM + FAM	**Time since injury (yrs mean, (std dev.)):** Outreach=4.0±4.9, Information=2.7±3.6 **Inclusion Criteria:** • Age 16-65 • Severe TBI between 3 months and 20 years previously • No other neurological conditions • Reside within 1 hour travel time of hospital • Long-term treatment goals amenable with intervention **Exclusion Criteria** NR	**Age (years, SD)** Outreach=34±11, Information=35±10 **Gender (% male):** 76% **Race/ethnicity** NR **Education** NR **Employment status** NR **Income** NR **Marital status** NR **Military/Veteran status** NR **Insurance status** NR **Prior TBI** NR **Psychiatric conditions** NR	**Severity** Mild: 1% Moderate: 0% Severe: 99% **Severity Definition:** Severe: PTA >1day Mild: PTA <= 1 hour **TBI Etiology** NR **Brain area injured** NR **Other injury characteristics:** NR	**Comorbidities** NR **Compensation seeking status** NR **Social support:** NR **Acute rehabilitation history:** community or post-rehab discharge **Concomitant Treatment** NR

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics

Prigatano, 1984[9]
 	
Study design
retrospective, controlled cohort study
 	
Sample size
18
 	
Location
Oklahoma City, Oklahoma
 	
Setting
Neuropsychological rehabilitation program
 	
Interventions
• Psychotherapeutic (n=18)
• Control (n=18)
 	
Primary outcomes
Return to work
	Inclusion criteria
	NR
	
	Exclusion criteria
	NR
		Age (years±SD)
		• Neuropsychologic 26.1±8.3
		• Control NR
		
		Gender (% male)
		• Neuropsychologic 83.3
		• Control NR
		
		Race/ethnicity
		NR
		
		Education (%)
		• Neuropsychologic
		  ○ ≤ 12 years 61.1
		  ○ > 12 years 38.9
		• Control NR
		
		Employment status (% competitively employed)
		• Neuropsychologic 72.2
		• Control NR
		
		Income
		NR
		
		Marital status
		NR
		
		Military/Veteran (%)
		• Neuropsychologic 5.6
		• Control NR
		
		Insurance status
		NR
		
		Prior TBI
		NR
		
		Preexisting psychiatric conditions
		NR
			Severity (% moderate/severe)
			NR
			
			Severity Definition
			Russell-Neurenger Average Impairment Rating
			
			Time since injury (months)
			• Neuropsychologic 21.6
			• Control NR
			
			TBI etiology
			“Severe closed head injury”
			
			Area of brain injured (%)
			• Neuropsychologic
			  ○ Severe cerebral contusion 61.1
			  ○ Brain stem contusion 5.6
			  ○ Severe cerebral contusion + brain stem contusion 33.3
			• Control NR
			
			Other injury characteristics (%)
			• Neuropsychologic
			  ○ Post traumatic seizure disorder 16.7
			  ○ Residual paresis 66.7
			  ○ Residual signs of aphasia and/or dysarthria 33.3
			  ○ “Virtually all . . . had cerebral contusions and/or brain stem contusion”
			• Control NR
				Comorbidities
				NR
				
				Compensation seeking
				NR
				
				Acute rehabilitation history
				NR
				
				Concomitant treatment
				NR

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics

Prigatano, 1994[7]
 	
Study design
Matched control, prospective cohort
 	
Sample size
79 (outcomes for 76)
 	
Location
Phoenix, Arizona
 	
Setting
Work Re-entry Program of the Adult Day Hospital for Neurological Rehabilitation at Saint Joseph's Hospital
 	
Interventions
• Neuropsychological rehab (n=41, outcomes for 38)
• Historic controls (n=38)
 	
Primary outcomes
Return to work
	Inclusion criteria
	• Primary diagnosis of craniocerebral trauma or TBI
	• By end of study, ≥ 15 months elapsed since injury
	• Admitted to study 2-55 months from injury
	• All subjects considered potentially able to return to work/school
	
	Exclusion criteria
	NR
		Age (years±SD)
		• Neuropsychological rehab 29.6±12.7
		• Historic controls (28.7±12.2
		
		Gender (% male)
		• Neuropsychological rehab 68.4
		• Historic controls 71.1
		
		Race/ethnicity
		NR
		
		Education (years±SD)
		• Neuropsychological rehab 13.6±2.3
		• Historic controls 12.0±1.2
		
		Employment status (% competitively employed)
		• Neuropsychological rehab 78.0
		• Historic controls NR
		
		Income
		NR
		
		Marital status
		NR
		
		Military/Veteran
		NR
		
		Insurance status
		NR
		
		Prior TBI
		NR
		
		Preexisting psychiatric conditions
		NR
			Severity (mean±SD)
			• Neuropsychological rehab 8.08±2.7
			• Historic controls (n=38) 8.03±2.8
			
			Severity definition
			GCS
			
			Time since injury (months±SD)
			• Neuropsychological rehab 43.3±16.1
			• Historic controls 33.5±8.7
			
			TBI etiology
			NR
			
			Area of brain injured
			NR
			
			Other injury characteristics (%)
			• Neuropsychological rehab
			  ○ CT/MRI findings of contusion and/or hematoma 87.7
			  ○ Skull fracture/no hematoma 4.9
			  ○ Loss of consciousness 7.3
			• Historic controls NR
				Comorbidities
				NR
				
				Compensation seeking
				NR
				
				Acute rehabilitation history
				NR
				
				Concomitant treatment
				NR

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics
Rattok, 1992[8] **Study design** 3 group comparison **Sample size** 59 **Location** New York, NY Metropolitan Area **Setting** Outpatient rehabilitation center **Interventions** • Treatment 1 (Balanced) • Treatment 2 (Interpersonal) • Treatment 3 (Individualized) **Primary outcomes** • Cognitive performance measures • Behavioral Competence Index (BCI) • Vocational	**Inclusion Criteria** • Diagnosis of TBI, ≥1hr coma • Diagnosis of cerebral anoxia, ≥12hr coma • ≥1 year post-injury • Neurological stability • Unsuccessful vocational or educational rehabilitation prior to entry into program • Residence in New York metropolitan area for duration of study • Age, 18-55 • Command of English • Partial independence in basic activities of self-care, ambulation, and continence • Minimum IQ of 80 on WAIS • Minimum motivation for rehabilitation • Basic level of social appropriateness and manageability in therapeutic or training environment **Exclusion criteria** • History or present psychiatric complications • History of drug or alcohol abuse • History of sociopathy • Inability to communicate	**Age (median years)** • Treatment 1: 26.8 • Treatment 2: 27.1 • Treatment 3:28.5 **Gender (% male)** • Treatment 1: 65% • Treatment 2: 89% • Treatment 3: 61% **Race/ethnicity (%)** NR **Education (median years)** • Treatment 1: 14.3 • Treatment 2: 13.5 • Treatment 3: 14.6 **Employment status (% competitively employed)** NR **Income** NR **Marital status (%)** NR **Military/Veteran** NR **Insurance status** NR **Prior TBI (%)** NR	**Severity definition** Severe=Coma of ≥1hr or cerebral anoxia of ≥12hrs **Severity (Days in coma)** • Treatment 1: 34.3 • Treatment 2: 38.9 • Treatment 3: 36.9 **Time since injury (median months)** • Treatment 1: 32 • Treatment 2: 33.8 • Treatment 3: 40.2 **TBI etiology** 95% acceleration/deceleration concussion; 5% cerebral anoxia **MRI/imaging findings** NR **Other injury characteristics (%)** • NR	**Prior psychiatric conditions (%)** • NR **Comorbidities (%)** • NR **Compensation seeking** NR **Acute rehabilitation history** "Unsuccessful"

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics
Salazar, 2000[3] **Study design:** RCT **Sample size** 120 **Location:** Washington, D.C. **Setting** US Military medical referral center **Interventions:** • Intensive, interdisciplinary, in-hospital cognitive rehabilitation program (Hospital)) (n=xx) • Limited home rehabilitation program with telephone support from psychiatric nurse (Home) (n=xx) **Primary Outcomes** • Return to work • Fitness for military duty Secondary Outcomes • none	**Inclusion Criteria:** • Moderate-to-severe closed head injury • Head injury within 3 months of randomization • Rancho Los Amigos cognitive level of 7 • Active duty military member; not pending separation • Accompanied home setting with at least 1 responsible adult available • Ability to independently ambulate • No prior severe TBI or other severe diability that would preclude return to active duty after study treatment **Exclusion Criteria:** • Mild TBI	**Age:** Hospital=25, 6.63; Home=26,6.22 **Gender(% male):** Hospital: 93% Home: 96% **Race/ethnicity(% white)** Hosptial: 69% Home: 70% **Education (% some college):** Hosptial: 41% Home=44% **Employment status:** NR **Income:** NR **Marital status (% married)** Hospital:30% Home=34% yes **Military/Veteran status(% active military):** 100% **Insurance status (% military coverage):** 100% **Prior TBI** Hospital: 11% Home: 18% **Psychiatric conditions(% posibive diagnosis)** Hospital=19% Home=25%	**Severity** **Severity Definition** Glasgow Coma Score≤13; or posttraumatic amnesia≥24 hours; or focal cerebral contusion or hemorrhage on computed tomography or MRI **Time since injury (mean days, SD)** Hospital: 38 (23.6) Home: 39 (33.2) **Etiology** MVC Hospital:49% Home: 72% Assault: Hospital: 27% Home: 9% Unknown: Hospital: 24% Home: 19% **Area of brain injured:** cerebrum; computed tomography or MRI **Other injury characteristics** Closed: 100%	**Comorbidities:** Headaches, violent behavior, aggressive behavior, seizures, major depression **Compensation seeking status:** NR **Social support:** Accompanied home setting with at least 1 responsible adult available **Acute rehabilitation history:** NR **Concomitant Treatment** NR

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics
Sarajuuri, 2005[6] **Study design** Prospective Cohort **Sample size** 39 **Location** Helsinki, Finland **Setting** Nationwide Rehabilitation Center & Neurosurgery Department within academic medical center hospital **Interventions** • Comprehensive (T) (n=19) • Conventional (C) (n=20) **Primary Outcome** Status of productivity	**Inclusion Criteria** • Independence in daily life and only slight physical disabilities • 16 to 55 years of age • completed compulsory education • adequate potential to achieve productivity **Exclusion Criteria** • significant psychiatric history • alcohol or drug abuse • previous brain injury • another malignant disease **Population (n)** T: 19 C: 20	**Age (at injury; years, SD)** T: 30.5 (±10.6) C: 29.5 (±11.0) **Gender (% male)** T: 84% C: 85% **Race/ethnicity** NR **Education (years, SD)** T: 11.3 (±2.0) C: 12.2 (±2.9) **Employment status (preinjury; % employed or stydying preinjury)** T: 84% C: 85% **Income** NR **Marital status** NR **Military/Veteran** NR **nsurance status** NR **Prior TBI** NR, but prior TBI is excluded **Preexixting psychiatric conditions** NR, but significant psychiatric history excluded	**Severity (admission GCS; mean, SD, range)** T: 7.9 (2.7) (4-14) C: 8.2 (2.5) (3-13) **Severity Definition:** NR **Time since injury (month,SD)** T: 84% C: 85% **TBI Etiology (% by mechanism)** MVC/bike/pedestrian T: 63% C: 55% Assault T: 5% C: 5% Other(fall, hit by) T: 26% C: 40% Unknown T: 5% C: 0% **Area of brain injured:** NR **Other Injury characteristics** Contusion/hematoma T: 79% C: 80% Diffuse axonal injury T: 42% C: 25% Severe intracranial pressure T: 37% C: 25% Craniotomy T: 21% C: 25%	**Comorbidities:** NR **Compensation seeking** NR **Acute rehabilitation history** OT T: 32% C: NR PT T: 47% C: NR SLP T: 26% C: NR NP T: 37% C: NR **Concomitant Treatment** NR

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics
Semlyen, 1998[16] **Study design** Prospective Cohort **Sample size** 51 **Location:** Newcastle upon Tyne, UK **Setting** Regional rehabilitation centre **Interventions:** • Coordinated, multidisciplinary rehabilitation • Single-discipline rehabilitation **Primary Outcomes** • None • **Secondary Outcomes** • Newcastle Independence Assessment Form-Research (NIAF-R) **Intermediate Outcomes** • Barthel Index • FIM	**Inclusion Criteria:** • Initial Glasgow Coma Scale score≤8 for at least 6 hours • Between 16-65 years • Identifiable primary consenter • Resides in Northern Regional Health Authority • Surgically stable and able to be discharged from neurosurgical unit within 4 weeks of injury **Exclusion Criteria:** • Previous drug or alcohol misuse • Premorbid neurologic history	**Age (at injury; years, SD)** Treatment: 36(13) Control: 30(12) **Gender (% male)** Treatment: 85% Control: 84% **Race/ethnicity:** NR **Education:** NR **Employment status:** NR **Income** "majority in both groups in lower-middle SES" **Marital status:** NR **Military/Veteran status:** NR **Insurance status:** NR **Prior TBI:** NR **Psychiatric conditions:** NR	**Severity** **Severe:** 100% **Severity Definition** Severe: GCS Score ≤8 for at least 6 hours **Time since injury (mean days, SD)** Treatment: 49.37 (29.62) Control: 17.94 (13.6) **TBI Etiology** MVC Treatment: 69.8% Control: 44.6% Falls Treatment: 18.2% Control:33.3% Assault Treatment: 9.1% Control: 22.2% Self-harm Treatment: Control: 3% **Brain area injured:** NR **Other injury characteristics** NR	**Comorbidities:** NR **Compensation seeking status:** NR **Acute rehabilitation history:** NR **Concomitant Treatment** NR

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics
Thomas, 2004[15] **Study design** Matched comparison **Sample size** 22 **Location** Australia **Setting** Community, Outward Bound course, patient home **Interventions** • 3-stage Outward Bound program (PUP) • Matched controls **Primary outcomes** • Quality of Life Inventory (QOLI)	**Inclusion Criteria** • Self-selected volunteers • ABI • Past or present client of NSW Brain Injury Rehabilitation Programme **Exclusion criteria** • NR	**Age (mean years±SD)** • PUP 31.54±10.37 • Controls 38.38±12.14 **Gender (% male)** • PUP NR • Control NR **Race/ethnicity (%)** • PUP NR • Control NR **Education (mean years±SD)** • Intensive therapy 13.2±1.9 • Standard therapy 12.5±1.2 **Employment status (% competitively employed)** • PUP "Most not working/studying" • Control "Most not working/studying" **Income** NR **Marital status (%)** • PUP NR • Control NR **Military/Veteran** NR **Insurance status** NR **Prior TBI (%)** • PUP NR • Control NR	**Severity definition** Mild=PTA 5-60 minutes Severe=PTA 1-7 days Very Severe=PTA 7-28 days Extremely Severe=PTA>28 days **Severity (%)** • PUP ○ Mild 2 ○ Severe 1 ○ Very Severe 2 ○ Extremely Severe 8 • Control ○ Mild 2 ○ Severe 3 ○ Very Severe 0 ○ Extremely Severe 3 **Time since injury (mean years±SD)** • PUP ○ 5.99±4.54 • Control ○ 4.97±2.28 **TBI etiology** NR **MRI/imaging findings** NR **Other injury characteristics (%)** • NR	**Prior psychiatric conditions (%)** • NR **Comorbidities (%)** prior substance abuse • NR **Compensation seeking** NR **Acute rehabilitation history (%)** All participants in PUP and control were current or past clients of New South Wales Brain Injury Rehabilitation Programme

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics

Vanderploeg, 2008[2]
 	
Study design RCT, Multicenter
 	
Sample size 366
 	
Location Minneapolis, Palo Alto, Richmond, Tampa
 	
Setting VA acute inpatient TBI rehab programs
 	
Interventions
• Cognitive-didactic (CD) rehab therapy (n=184)
• Functional-experiential (FE) (n=182)
 	
Primary Outcomes
• Return to work
 	
Secondary Outcomes
• Disability Rating Scale score
• Functional independence in living
	Inclusion Criteria: (1) moderate-to-severe nonpenetrating TBI within the preceding 6 months, manifested by a postresuscitation Glasgow Coma Scale score of 12 or less, or coma of 12 hours or more, or PTA of 24 hours or more, and/or focal cerebral contusion or hemorrhage on CT or MRI; (2) RLAS cognitive level of 5 to 7 at time of randomization; (3) age 18 years or older; (4) active duty military member or veteran; and (6) anticipated length of needed acute interdisciplinary TBI rehabilitation of 30 days or more
	
	Exclusion Criteria: (1) history of prior inpatient acute rehabilitation for the current TBI and (2) history of a prior moderate to severe TBI or other preinjury severe neurologic or psychiatric condition, such as psychosis, stroke, multiple sclerosis, or spinal cord injury
		Age (at injury; years, SD)
		CD 33.2 (±13.5)
		FE 31.7 (±12.9)
		
		Gender (% male)
		CD: 92% FE:95%
		
		Race/ethnicity
		Hispanic
		CD: 10% FE:11%
		White
		CD: 68% FE:69%
		Black
		CD: 20% FE:18%
		Other
		CD: 12% FE:12%
		
		Education (% post high school)
		CD: 34% FE:37%
		
		Employment status: (% working or in school)
		CD: 86% FE:89%
		
		Income: NR
		
		Marital status (% married)
		CD: 25.6% FE: 25.1%
		
		Military/Veteran status (% what?)
		CD: 58.4% FE:67.8%
		
		Insurance status: NR
		
		Prior TBI (% "prior head injury")
		CD: 7.2% FE: 7.2%
		
		Pre-existing psychiatric conditions: NR
			Severity NR, but moderate/severe inclusion criteria
			
			Severity Definition: NR
			
			Time since injury:
			• CD 48.9±28.5 (n = 180) days
			• FE 51.1±29.8 (n = 180) days
			
			TBI Etiology:
			MVC
			CD: 68% FE:66%
			Assault
			CD: 10% FE:8%
			
			Area of brain injured: NR
			
			Injury characteristics:
			• CD
			  ○ Motor vehicular 122/180 (67.8%)
			  ○ Fall 21/180 (11.7%)
			  ○ Blunt object 15/180 (8.3%)
			  ○ Sports/training accident 5/180 (2.8%)
			  ○ Indeterminant 17/180 (9.4%)
			• FE
			  ○ Motor vehicular 119/180 (66.1%)
			  ○ Fall 29/180 (16.1%)
			  ○ Blunt object 9/180 (5.0%)
			  ○ Sports/training accident 6/180 (3.3%)
			  ○ Indeterminant 17/180 (9.4%)
				Comorbidities: NR
				
				Compensation seeking status: NR
				
				Acute rehabilitation history: NR
				
				Concomitant Treatment NR

Appendix E. Table 1. Evidence table of multidisciplinary postacute rehabilitation for moderate to severe TBI studies

Study Description	Inclusion/Exclusion Criteria	Demographic/ Preinjury Characteristics	TBI Characteristics	Postinjury Characteristics
Willer, 1999[12] **Study design** Case controlled study using a matched design in a before-and-after trial **Sample size** 46 **Location** Ontario, Canada **Setting** Postacute residential rehabilitation program or home-based subjects **Interventions** • Residential-based postacute rehabilitation (RBPR) (n=23) • Control (n=23) **Primary outcomes** CIQ	**Inclusion criteria** Individuals with brain injury who had not undergone treatment in this community-based program **Exclusion criteria** NR	**Age (years±SD)** • RBPR 33.42±11.31 • Control 34.76±10.72 **Gender (% male)** • RBPR 87 • Control 87 **Race/ethnicity** NR **Education (%)** • RBPR ○ < HS 26.0 ○ Completed HS 43.5 ○ > HS 30.4 • Control ○ < HS 26.0 ○ Completed HS 34.8 ○ > HS 39.1 **Employment status** NR **Income** NR **Marital status** NR **Military/Veteran** NR **Insurance status** NR **Prior TBI** NR **Preexisting psychiatric conditions** • RBPR: 30.4% were recruited from psychiatric hospitals • Control NR	**Severity (% moderate/severe)** All subjects were considered severe TBI **Severity Definition (HALS disability score±SD)** • RBPR 20.39±6.02 • Control 20.30±6.09 **Time since injury (years±SD)** • RBPR 3.05±2.98 • Control 4.66±4.66 **TBI etiology (%)** • RBPR ○ Vehicular related 95.7 ○ Assault 4.3 • Control ○ Vehicular related 95.7 ○ Assault 4.3 **Area of brain injured** NR **Other injury characteristics** Closed brain injury ○	**Comorbidities** NR **Compensation seeking** NR **Acute rehabilitation history** NR **Concomitant treatment** NR

Appendix E. Table 2. Intervention Characteristics

Study Target Population	Intervention Arm	Intervention Description and Implementation
Bell, 2005[13] **Moderate to Severe TBI**	**Telephone Counseling** **Theory/Model:** Modeled after validated telephone interventions in chronic care, smoking cessation, depression **Program Type:** Post-rehabilitation telephone contact **Setting:** Patient home **Delivery:** Scheduled phone calls with individualized mail supplements	**Description:** Scheduled phone calls made "research care manager to randomly allocated post-rehabilitation discharge patients. Calls were comprised of 3 basic elements: Follow-up of previously stated concerns, patient or family member stated current concerns, research care manager determined level of intervention in response to patient's concern. **Coordination:** NR **Disciplines:** NR **Components:** Giving information, mentoring, goal-setting, reassurance, modeling problem-solving, referral to community resources, triaging to regional or tertiary center if local resources unavailable **Therapy hours/week:** 30-45 minutes, weeks 2, 4 and months 2, 3, 5, 7, and 9 post-rehabiltation **Duration:** 9 months **Total therapy hours:** NR **Manualized:** Yes, described in detail in previous publication **Staff Training:** NR **Fidelity Checks:** NR
	Standard Follow-up **Theory/Model:** NR **Program Type:** Recommendations of the acute rehabilitation team with no compliance checks **Setting:** Patient home **Delivery:** N/A	**Description:** Patient given recommendations from acute care team then not contacted until 1 year follow-up **Coordination:** NR **Disciplines: primarily** NR **Components:** NR **Therapy hours/week:** NR **Duration:** 1 year **Total therapy hours:** NR **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR

Appendix E. Table 2. Intervention Characteristics

Study Target Population	Intervention Arm	Intervention Description and Implementation
Cicerone, 2004 [11] **Chronic Moderate to Severe TBI**	**Intensive Cognitive Rehabilitation Program (ICRP)** **Theory/Model:** Holistic neuropsychological rehabilitation (Ben-Yishay and Gold 1990) **Program Type:** Community-based day treatment program **Setting:** Suburban postacute brain injury rehabilitation center (US) **Delivery:** Peer groups progress through program together.	**Description:** 'Individual and group cognitive remediation with an emphasis on increasing awareness and developing compensations for cognitive deficits, small-group treatment for interpersonal and pragmatic communication skills, individual and/or group psychotherapy, family support, and therapeutic work trials and placement to facilitate educational or vocational readiness.' **Coordination:** NR **Disciplines:** NP, VT,; PT, OT if necessary **Components:** Cognitive group - 6 hrs/wk; individual cognitive remediation - 3 hrs/wk; communication and interpersonal skills group - 3 hrs/wk; applied skills group - 1 hr/wk; additional tailored therapies - variable/wk; therapeutic work trials – 1 day/wk; family involvement. **Therapy hours/week:** 15 hrs/wk **Duration:** 16 weeks **Total therapy hours:** 240 hours. **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR
	Standard Rehabilitation Program (SRP) **Theory/Model:** 'conventional program' **Program Type:** Community-based day treatment program **Setting:** Postacute brain injury rehabilitation center (Suburban US) **Delivery:** Individuals progress through tailored treatments	**Description:** Treatment content and duration tailored to individual. **Coordination:** monitored by staff NP throughout course of treatment **Disciplines: primarily** NP, PT, OT, SLP; could also include RT, VT, E psychologic counseling **Components:** Tailored, typical patterns NR **Therapy hours/week:** 15 hrs/ wk initially, adjusted individually to range of 12 to 24 hr/ wk. **Duration:** 3.9 mo (mean) **Total therapy hours:** variable **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR

Appendix E. Table 2. Intervention Characteristics

Study Target Population	Intervention Arm	Intervention Description and Implementation
Cicerone, 2008[1] **Chronic Moderate to Severe TBI**	**Intensive Cognitive Rehabilitation Program (ICRP)** **Theory/Model:** Berquist 1994; Holistic neuropsychological rehabilitation (Ben-Yishay and Gold 1990) **Program Type:** Day treatment program **Setting:** Suburban postacute brain injury rehabilitation center (US) **Delivery:** Peer groups progress through program together.	**Description: Integrated treatments for c**ognitive deficits, interpersonal and behavioral difficultings, functional skills within therapeutic environment. Meta-cognition, emotional regulation, compensatory approaches emphasized. Weeks grouped by themes. **Coordination:** **Disciplines:** NP, primary therapist **Components:** Cognitive group - 6 hrs/wk; communication and interpersonal skills group - 3 hrs/wk; life skills group - 2 hr/wk; individual therapy - 3 hrs/wk, individual NP treatment 1 hr/wk. **Therapy hours/week:** 15 hr/wk **Duration:** 16 weeks **Total therapy hours:** 240 **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** Yes
	Standard Neurorehabilitation Program (STD) **Theory/Model:** Comprehensive , interdisciplinary day treamtment program (Malec 1996 Berquist 1994 **Program Setting/Type:** Day treatment program **Setting:** Postacute brain injury rehabilitation center (Suburban US) **Delivery:** Individuals progress through tailored treatments	**Description:** Individual, discipline-specific therapies targeting specific deficit areas designed to be responsive to stage and rate of recovery after TBI. Restorative strategies. **Coordination:** Followed by NP. **Disciplines:** NP**,** Psych, PT, OT, SLP, RT, VT, EC **Components:** Amounts and combinations of therapies varied. Most participants: individual NP treatment – 1 hr/wk; Participants could receive psychological counseling – 1 hr/wk, RT, VT, or educational counseling – 1 hr/wk; group therapy limited to 3 hrs/wk **Therapy hours/week:** 15 **Duration:** 16 weeks **Total therapy hours:** 240. **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** Yes

Appendix E. Table 2. Intervention Characteristics

Study Target Population	Intervention Arm	Intervention Description and Implementation
Greenwood, 1994[4] **Severe TBI**	**Case Management** **Theory/Model:** Case management model established by authors in previous papers; "assertive" or "clinical" case management elements developed by Holloway for mentally ill **Program Type:** Pro-active case management **Setting:** 4 general hospitals and 2 university teaching hospitals **Delivery:** Home-based outreach	**Description:** Early (within 7 days of injury) case management program which served as facilitator rather than therapeutic role, recruiting services for patient from a variety of agencies. **Coordination:** Case manager **Disciplines:** Physiotherapy, occupational therapy, speech therapy, psychology, social work **Components:** Determining patient needs and recruiting services based on these needs **Therapy hours/week:** NR **Duration:** NR; outcomes reported at 6, 12, and 24 months **Total therapy hours:** NR **Manualized:** Yes, described in detail in previous publication **Staff Training:** NR **Fidelity Checks:** NR
	Control **Theory/Model:** NR **Program Type:** Standard rehabilitation **Setting:** 4 general hospitals and 2 university teaching hospitals **Delivery:** N/A	**Description:** Patient given standard rehabilitation without case management **Coordination:** NR **Disciplines:** Physiotherapy, occupational therapy, speech therapy, psychology, social work **Components:** NR **Therapy hours/week:** NR **Duration:** NR, outcomes reported at 6, 12, and 24 months **Total therapy hours:** NR **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR

Appendix E. Table 2. Intervention Characteristics

Hashimoto, 2006[10] **Moderate to Severe TBI comprehensive treatment of varying intensities**	**Comprehensive Day Treatment program** **Theory/Model:** Positivist-behavioral **Program Type:** Comprehensive **Setting:** Rehabilitation hospital **Delivery:** Group	**Description:** Group sessions focusing on enhancing individual's quality of life by teaching useful and effective behaviors and by redesigning patient's environment to help achieve goals. **Coordination:** All staff members **Disciplines:** Physical, social work, psychology, speech, vocational, "gymnastics," occupational, welfare **Components:** **Therapy hours/week:** 4 sessions/day for total of 4hrs/day for 6 months **Duration:** 6 months **Total therapy hours:** NR **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR
	Comprehensive Day Treatment program **Theory/Model:** Positivist-behavioral **Program Type:** Comprehensive **Setting:** Rehabilitation hospital **Delivery:** Group	**Description:** Group sessions focusing on enhancing individual's quality of life by teaching useful and effective behaviors and by redesigning patient's environment to help achieve goals. **Coordination:** All staff members **Disciplines:** Physical, social work, psychology, speech, vocational, "gymnastics," occupational, welfare **Components:** N/A **Therapy hours/week:** 4 sessions for total of 2 hrs/day, twice weekly **Duration:** 4 months **Total therapy hours:** NR **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR

Appendix E. Table 2. Intervention Characteristics

Comprehensive Day Treatment program **Theory/Model:** Positivist-behavioral **Program Type:** Comprehensive **Setting:** Rehabilitation hospital **Delivery:** Group	**Description:** Group sessions focusing on enhancing individual's quality of life by teaching useful and effective behaviors and by redesigning patient's environment to help achieve goals. **Coordination:** All staff members **Disciplines:** Physical, social work, psychology, speech, vocational, "gymnastics," occupational, welfare **Components:** Giving information, mentoring, goal-setting, reassurance, modeling problem-solving, referral to community resources, triaging to regional or tertiary center if local resources unavailable **Therapy hours/week:** 4 sessions for total of 2 hrs/day, twice weekly **Duration:** 3 months **Total therapy hours:** NR **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR
Comprehensive Day Treatment program **Theory/Model:** Positivist-behavioral **Program Type:** Comprehensive **Setting:** Rehabilitation hospital **Delivery:** Group	**Description:** Group sessions focusing on enhancing individual's quality of life by teaching useful and effective behaviors and by redesigning patient's environment to help achieve goals. **Coordination:** All staff members **Disciplines:** Physical, social work, psychology, speech, vocational, "gymnastics," occupational, welfare **Components:** N/A **Therapy hours/week:** 4 sessions for total of 2 hrs/day, twice weekly **Duration:** 4 months **Total therapy hours:** NR **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR

Appendix E. Table 2. Intervention Characteristics

Ponsford, 2006[5] **Postacute moderate to severe TBI**	**Community-based therapy programme (CT)** **Theory/Model:** NR **Program Type:** Community-based group therapy **Setting:** Epworth Rehabilitation Programme (Australia) **Delivery:** Tailored to individaul	**Description:** Access and conduct therapy in the home, workplace or community setting with active involvement of TBI individual, relatives and other s. **Coordination:** NR **Disciplines:** several disciplines; referrals made to local services; a significan number of patient do attend regular physiotherapy sessions at the rehabilitation center.. **Components:** Identification of important roles, goal setting, assessment of strengths and weaknesses, impairments and disabilities to be overcome to achieve goals. Therapies delivered in relevant setting. **Therapy hours/week:** NR, but most patients seen by a given therapist once a week or less **Duration:** NR **Total therapy hours:** NR. **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR
	Hospital-based outpatient rehabilitation (historical) **Theory/Model:** NR **Program Type:** Hospital-based outpatient **Setting:** Epworth Rehabilitation Programme (Australia) **Delivery:** Tailored to individual	**Description:** Group social communication skills training to improve pragmatic language skills, social behaviors and cognitive abilities**.** **Coordination:** NR **Disciplines:** NR **Components:** domain specific therapies and group sessions, visits to home, work, shopping, domestic activities. **Therapy hours/week:** NR **Duration:** NR **Total therapy hours:** NR **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR

Appendix E. Table 2. Intervention Characteristics

Powell, 2002[14] **Chronic Severe TBI**	**Outreach** **Theory/Model:** NR **Program Type:** Multidisciplinary Outreach **Setting:** Homes or community settings – organized through Homerton Hospital (London) **Delivery:** Tailored to individual	**Description:** a goal planning framework for delivering rehabilitation through individualized retraining delivered through community –based services. **Coordination:** led by a clinical NP **Disciplines:** OT, PT, S:P, psych, SW **Components::** Individual sessions, 2/week **Therapy hours/week:** 2-6 hours/week **Duration:** 6-12 weeks for goal setting/assessment; After initial assessment period, individuals seen for 27.3(sd=19.1) weeks for treatment **Total therapy hours:** NR **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR
	Information **Theory/Model:** NR **Program Type:** Information **Setting:** Home - organized through Homerton Hospital (London) **Delivery:** Home visit & Standard booklet	**Description:** One home visit by therapist who gave patient specially collated booklet listing resources and highlighting those relevant to patient's needs. **Coordination:** NR **Disciplines:** team therapist **Components:** Individual session, education **Therapy hours/week:** 0 **Duration:** 1 visit **Total therapy hours:** 1 **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR

Appendix E. Table 2. Intervention Characteristics

Prigatano, 1984[9] **Chronic Severe Closed Head Injury Patients**	**Neuropsychological Rehabilitation Program (NRP)** **Theory/Model:** Milieu based programs (Ben-Yishay 1982, Rosenbaum et al., 1978) **Program Type:** Hospital-based outpatient **Setting:** Presbyterian Hospital (Oklahoma City, US) **Delivery:** Peer groups progress through treatments	**Description:** Intensive, coordinated treatment emphasizing awareness and acceptance of impairments; cognitive retraining of select residual deficits and the development of compensatory skills. **Coordination:** NR **Disciplines:** NP, SLP, OT, PT, psychologist **Components:** Small group and individual sessions **Therapy hours/week:** 24 **Duration:** 6 mo. **Total therapy hours:** 576 **Manualized:** Yes **Staff Training:** NR **Fidelity Checks:** NR
	Untreated	
Prigatano, 1994[7] **Chronic Moderate to Severe TBI with adequate potential to return to work**	**Neuropsychological Rehabilitation Program (NRP)** **Theory/Model:** Intensive holistic cognitive rehabilitation/milieu program **(**Ben-Yishay et al., 1985) Neuropsychological rehabilitation (Ben-Yishay, et al., 1987) **Program Type:** Work Re-entry program **Setting:** Adult Day Hospital for Neurological Rehabilitation, Saint Joseph's Medical Center (Phoenix, AZ) **Delivery:** Peer groups progress through treatment	**Description:** A series of interdisciplinary therapies embedded in a milieu program thet emphasizes a holistic approach. Teadching patienst to be part of a small communityencouraging cooperation and responsibility. Simulated natural setting. Individual learns along with othes. TBI patients who underwent a specialty rehabilitation program; after 6-8 weeks of therapy, patients were integrated into 15-20 hours of work per week **Coordination:** NR **Disciplines:** PT, OR, SPL, cognitive therapy **Components:** individual therapies depending upon needs, individual psychotherapy, daily group psychotherapy, 'simulated' community interaction, protected work trial. **Therapy hours/week:** 24 **Duration:** 6 mo. **Total therapy hours:** approximately 576 **Manualized:** No **Staff Training:** NR **Fidelity Checks:** NR

Appendix E. Table 2. Intervention Characteristics

	Untreated (historical)	
Rattok, 1992[8] **Cognitive remediation**	**Treatment 1 - Balanced** **Theory/Model:** Ben-Yishay **Program Type:** Balanced **Setting:** Outpatient rehabilitation center **Delivery:** Small group	**Description:** Balanced package that included training to alleviate attentional disorders, individualized cognitive remediation, small-group interpersonal communication exercises, therapeutic community activities, and personal counseling functions. Remediative cognitive training included. **Coordination:** NR **Disciplines:** NR **Components:** Individual and small-group counseling **Therapy hours/week:** 5hr/day, 4 days/week **Duration:** 20 weeks **Total therapy hours:** 200 **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR
	Treatment 2 - Interpersonal **Theory/Model:** Ben-Yishay **Program Type:** Small-group, interpersonal **Setting:** Outpatient rehabilitation center **Delivery:** Small group	**Description:** Training in attention, community activities, and personal counseling; no individualized counseling; emphasis on small-group interpersonal exercises **Coordination:** NR **Disciplines:** NR **Components:** Group work **Therapy hours/week:** 5hr/day, 4 days/week **Duration:** 20 weeks **Total therapy hours:** 200 **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR

Appendix E. Table 2. Intervention Characteristics

Salazar, 2000[3] Moderate to Severe Closed head injury among active duty military personnel	**Inpatient Cognitive Rehabilitation** **Theory/Model:** Milieu-oriented approach modified to fit military framework (Prigatano 1994 Prigatano 1989); intergrated work therapy (Ben-Yishay 1987, Burke 1988) **Setting:** minimum care hospital ward, Walter Reed Army Medical Center (Washington, DC) **Delivery:** Peer groups progress through treatmen	**Description:** In a military milieu, physical fitness training and group and individual cognitive, speech, occupational, and coping skills therapies conducted with integrated work therapy coordinated to simulate patient's previous work or military specialty **Coordination:** Physiatrist **Disciplines:** Neuropsychology, occupational therapy, speech pathology, physical therapy, neurological and psychiatric consultation **Components:** Group and individual **Therapy hours/week:** NR **Duration:** 6 wks. **Total therapy hours:** NR **Manualized:** Yes **Staff Training:** NR **Fidelity Checks:** Intermittent reviews and continuing education
	Home rehabilitation **Theory/Model:** NR **Program Type:** Home-based postacute rehabilitation **Setting:** Home **Delivery:** Visits and phone calls from psychiatric nurse.	**Description:** Patients received TBI education and individual counseling from a psychiatric nurse and were given educational materials and recommended strategies for enhancing cognitive and organizational skills. included **Disciplines:** psychiatric nurse **Components: Trained to in various home number and** card games; encouragement to read and watch news programs, resumed daily physical exercise at their own pace. **Therapy hours/week:** .5 h/wk **Duration weeds:** 8 weeks **Total therapy hours:** NR **Manualized:** Yes **Staff Training:** NR **Fidelity Checks:** NR

Appendix E. Table 2. Intervention Characteristics

Sarajuuri, 2005[6] **Chronic Moderate to Severe TBI**	**INSURE Program** **Theory/Model:** Neuropsychologic rehabilitation and psychotherapy (Ben-Yishay 1987 ; Ben-Yishay 1985 Christensen 1992, Prigatano 1986) **Program Type:** Residential Neuropsychologic rehabilitation **Setting:** Kapyla Rehabilitation Centre (Helsinki, Finland) **Delivery:** Peer groups progress through treatment	**Description:** Postacute, interdisciplinary, 6-week, inpatient neuropsychologic rehabilitation and psychotherapy. Therapeutic alliance is emphasized. Compensatory techniques, **Coordination:** NR **Disciplines:** NP, neurologist, rehabilitation nurse, SW, SPL, OT, PT **Components:** Cognitive group – 2 session/wk, pragmatic group – 1 session/wk, pictures of self group – 1 session/ wk, quality of life group – 1 session/ wk, sport, relaxation, and jogging group – 1 session/ wk; 2-day seminar with participation from family, employers, public health professionals to plan remaining 2 wks of program; supported and individually tailored vocational interventions. **Therapy hours/week:** 37.5 **Duration weeks:** 6 weeks **Total therapy hours:** 225 **Manualized:** Yes **Staff Training:** NR **Fidelity Checks:** NR
	Conventional Rehabilitation **Theory/Model:** NR **Program Type:** As referred by physician **Setting:** Recruited from Department of Neurosurgery, Helsinki University Central Hospital, Level 1 Trauma Center **Delivery:** As referred by physician	**Description:** Conventional clinical care and rehabilitation in local healthcare system. Rehabilitation services individually tailored and delivered in an unstructured and nonsystematic way. **Coordination:** NR **Disciplines:** Such as PR, PR SLP, NP and psychotherapy **Components:** NR **Therapy hours/week:** NR **Duration:** NR **Program total therapy hours:** NR **Manualized:** No **Staff Training:** No **Fidelity Checks:** No

Appendix E. Table 2. Intervention Characteristics

Semlyen, 1998[16] **Postacute Severe TBI**	**Multidisciplinary rehabilitation** **Theory/Model:** NR **Program Type:** Residential Neuropsychologic rehabilitation **Setting:** Hunters Moor Regional Rehabilitation Centre (Newcastle upon Tyne, UK) **Delivery:** Coordinated, multidisciplinary rehabilitation delivered individually	**Description:** Coordinated multidisciplinary approach that could include Inpatient, outpatient or home-based services delivered by multidisciplinary team with TBI specialization and coordinated patient goal setting with patient, team, and family members. Weekly review of goals. **Coordination:** NR **Disciplines:** nursing, PT, SLP, OT, clinical psychology, rehabilitation medicine, counseling, social work **Components:** individualized, daily **Therapy hours/week:** NR **Duration:** 201.0±144.12 (mean days±SD); **Total therapy hours:** NR **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR
	Single discipline approach **Theory/Model:** NR **Program Type:** variable **Setting:** settings other than Hunters Moor Regional Rehabilitation Centre (Newcastle upon Tyne, UK) **Delivery:** variable, but independatn for each Individual	**Description**: Less coordinated, single discipline approaches including inpatient and outpatient rehabilitation and could be only physiotherapy delivered for 1 hour once a week or several therapies providing input several times a week. **Coordination:** NR **Disciplines:** NR **Components**: variable **Total therapy hours/week:** NR **Program Duration:** 111.80±175.17 (mean days±SD) **Total therapy hours:** NR **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR

Appendix E. Table 2. Intervention Characteristics

Thomas, 2004[15] **Adjustment to Acquired Brain Injury**	**Potential Unlimited Program (PUP)** **Theory/Model:** Simpson, 1996; Understanding, Re-integrating identity, acceptance, restructuring **Program Type:** Outward Bound **Setting:** Community, Outward Bound course (Australia), patient home **Delivery:** Mixed	**Description:** Three stage program consisting of 1)Group fundraising, 2)9-day Outward Bound "Discovery" course adapted to accommodate patients' needs, 3)Follow-up group work to transfer insights from program to key areas of psychosocial functioning **Coordination:** NR **Disciplines:** NR **Components:** Goal setting, group work, physical activities **Therapy hours/week:** Stage 1 = NR, Stage 2= 9 days, Stage 3 = 2 hours every other week for 3-4 months **Duration:** NR **Total therapy hours:** NR **Manualized:** Outward Bound portion (Stage 2) **Staff Training:** NR **Fidelity Checks:** NR
	Control **Theory/Model:** NR **Program Type:** NR **Setting:** NR **Delivery:** N/A	**Description:** Matched patients who had expressed initial interest in the PUP but were unable to participate **Coordination:** NR **Disciplines:** NR **Components:** NR **Therapy hours/week:** NR **Duration:** Assessments taken at same time points as PUP group **Total therapy hours:** NR **Manualized:** NR **Staff Training:** NR **Fidelity Checks:** NR

Appendix E. Table 2. Intervention Characteristics

Vanderploeg, 2008[2] **Postacute Moderate to Severe TBI in veterans or active duty military personnel**]	**Cognitive didactic treatments inpatient TBI rehabilitation** **Theory/Model: Cognitive-didactic treatments** (Sohlberg & Mateer 1986, 1989, 2001) **Program Type:** Residential postacute rehabilitation center **Setting:** Four VA inpatient postacute rehabilitation centers **Delivery:** Individual in person	**Description:** Emphasized explicit learning in an environment permitting and encouraging errors to assist clients to develop cognitive self-awareness. Targeting specific cognitive processes. Targeted 4 cognitive domains (attention, memory, executive function, and pragmatic communication) using trial-and-error learning approach to address patient self-awareness. Directly rehabilitating the cognitive deficits that underlie most functional TBI deficits to result in a generalized functional improvement. **Coordination:** Physiatrist **Disciplines:** Rehabilitation nurses, PT, PR, rehabilitation counseling, patient and family education, psychologic or SW support services, Occupational therapy, physical therapy, speech/cognitive/language therapy, neuropsychology **Components:** 7.5-15 hrs/wk cognitive didactic treatment integrated into essential CARF standard of care interdisciplinary rehabilitation. Memory notebooks. **Therapy hours/week:** 21.5-30 hrs/wk **Duration:** 32.2(±12.2) days **Total therapy hours:** NR; continued until clinically judged ready for discharge or 60 days **Manualized:** No **Staff Training:** Yes **Fidelity Checks:** Yes
	Functional-experiential treatments within inpatient TBI rehabilitation **Theory/Model:** Functional treatment concepts (Giles1993, 1999, 2006; Hartley 1995) **Program Type:** Residential postacute rehabilitation center **Setting:** Four VA inpatient acute rehabilitation centers **Delivery:** Groups in natural settings	**Description:** Real life performance situations and common tasks to remediate or compensate forfucntional deficits Learning-by-doing functional daily activities using an errorless treatment strategy incorporating therapist direction and structure to complete components of gradually more complex tasks; did not entail explicit awareness or learning, but rather emphasized mothor and other forms of implicit learning. **Coordination:** Physiatrist **Disciplines:** Occupational therapy, physical therapy, speech/cognitive/language therapy, neuropsychology **Rehab Goals:** To use real-life performance situations and common tasks to remediate or compensate for functional deficits **Components:** 7.5-15 hrs/wk functional-experimental treatment integrated into essential CARF standard of care interdisciplinary rehabilitation. Memory notebooks. **Therapy hours/week:** 21.5-30 hrs/wk **Duration:** 33.3(±13.6) mean (std dev) days **Total therapy hours:** NR; continued until clinically judged for discharge or until 60 days **Manualized:** No **Staff Training:** Yes **Fidelity Checks:** Yes

Appendix E. Table 2. Intervention Characteristics

Willer, 1999[12] Postacute severe brain injury with multiple disabilities	**Community-based residential rehabilitation** **Theory/Model:** Cognitive rehabilitation and community readaptation (Fryer 1987) **Program Type:** Residential postacute rehabilitation program **Setting:** homelike residential (Canada) **Delivery:** Individuals	**Description:** TBI subjects who received postacute, community and residential-based rehabilitation **Coordination:** NP **Disciplines: MD, PT, OT, SPL,** paraprofessionals **Components:** NR **Therapy hours/week:** NR **Duration:** ≥ 1 year (up to 3 years) **Total therapy hours:** NR **Manualized:** No **Staff Training:** Yes **Fidelity Checks:** No
	Home-based rehabilitation services **Theory/Model:** NA **Program Type:** varies **Setting:** Home and outpatient sevices **Delivery:** Individuals	**Description:** A highly variable range of home-based or outpatient services. **Coordination:** NR **Disciplines:** occupational and physical therapists, neuropsychology, case management , and nursing services **Components:** NR **Total therapy hours/week:** NR **Program Duration:** ≥ 1 year (up to 3) **Total therapy hours:** NR **Manualized:** No **Staff Training:** Yes **Fidelity Checks:** No

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